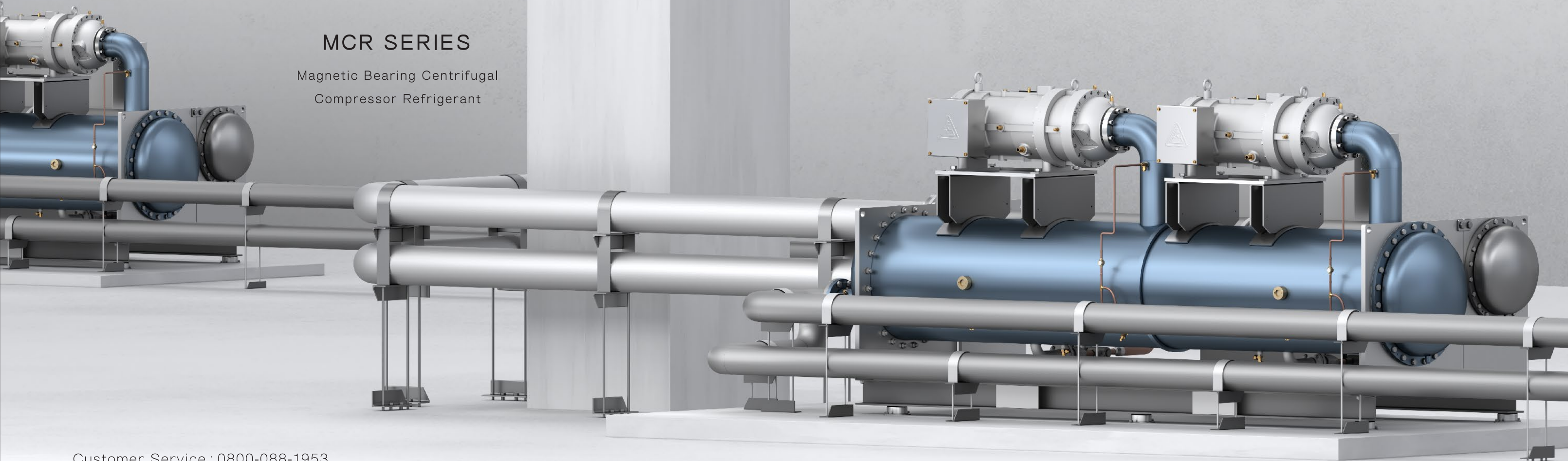


# MCR SERIES

Magnetic Bearing Centrifugal  
Compressor Refrigerant



**MCR SERIES**  
Magnetic Bearing Centrifugal  
Compressor Refrigerant



Customer Service : 0800-088-1953

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Fusheng has the final interpretation of this catalogue.

MCR-11307-112A000-E1

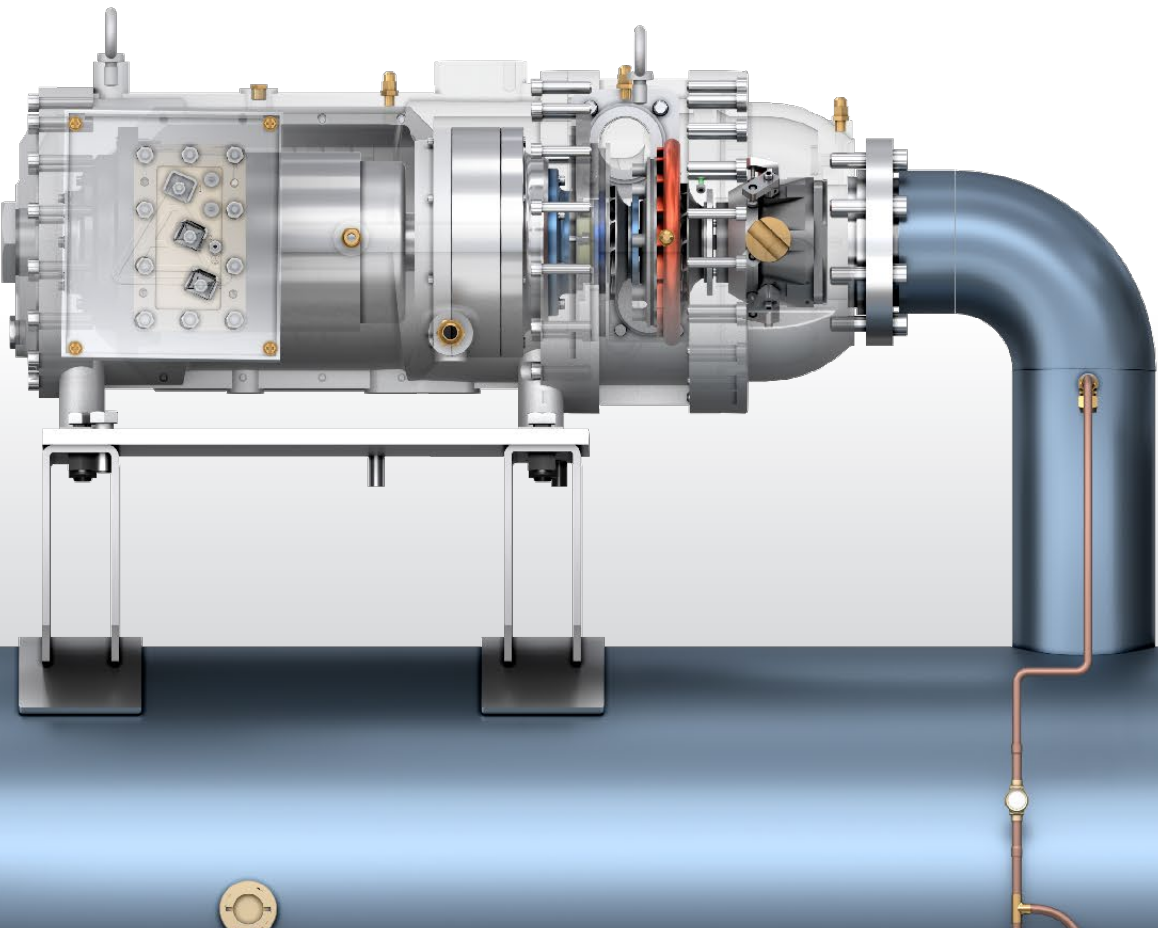


Pursuing Excellence,  
Enriching Life

# Magnetic Bearing Centrifugal Compressor Refrigerant

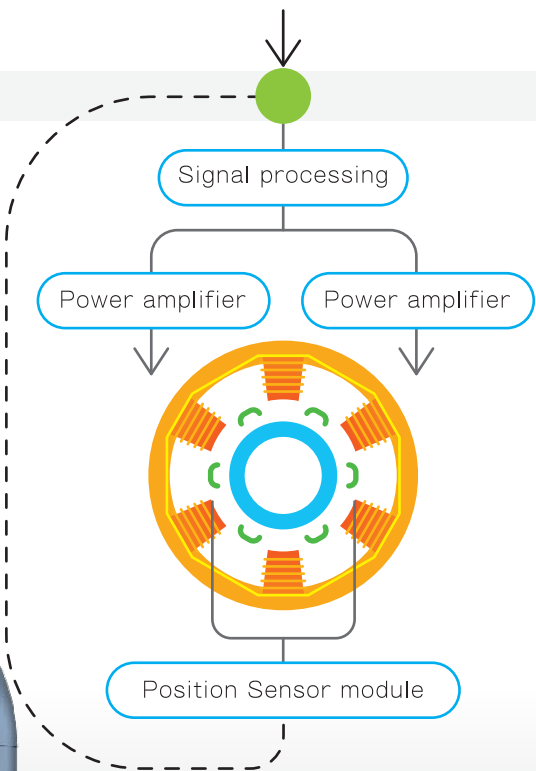
## System Simplification Lightweight Aluminum alloy

- Oil free design  
Magnetic bearings, no oil, oil pump, oil cooler, oil filter, oil separator required.
- Without gear transmission  
No oil lubrication, filtration, cooling required.



## Bearing Control Technology

- High-sensitivity and high-linearity position sensor modules to reduce the influence for bearings under unbalance and vibration.
- 20 KHz dynamic scan and adjustment to accurate the shaft position.



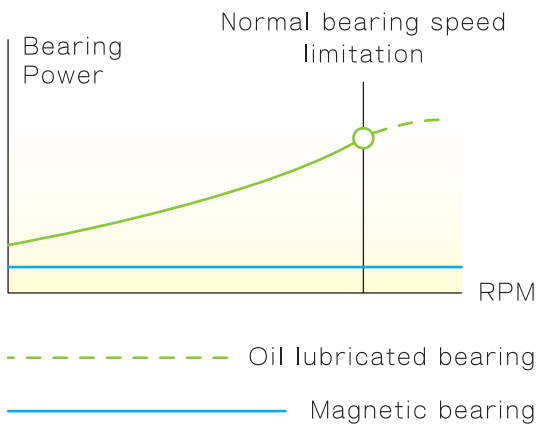
## Features

- Delivering high efficiency
- Controlling surge
- Reducing vibration, sound level
- Oil free, less pollution
- Compact, lightweight

## Magnetic Bearing technology

- Full load operation has passed international standard specifications for rotor vibration accuracy and control sensitivity.
- Equipped radial and axial magnetic bearings with low power consumption and high loading feature.
  - Lower than 0.4Kw power consumption only 2-10% than oil lubricated bearings.
  - Surpass the oil lubricated bearings rotation limitation, higher speed reduce the power consumption and save the energy.

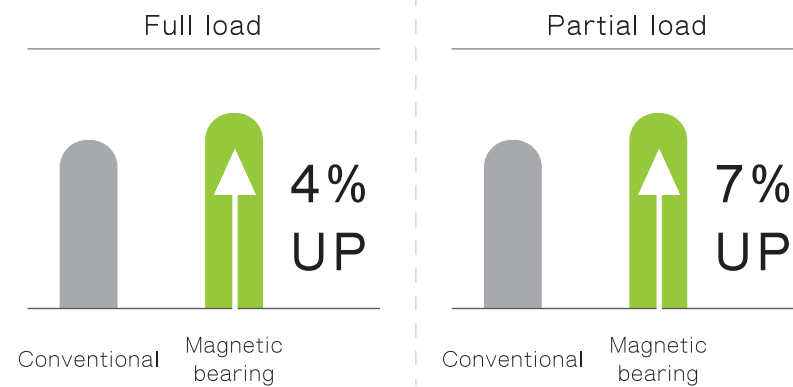
## Bearing Power contrast





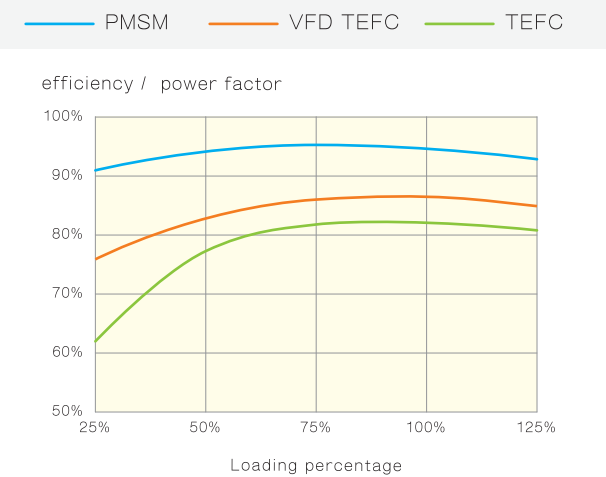
## Oil free high performance

Newly design MCR series take Magnetic bearings and permanent Magnet synchronous motor, Combined with horizontal symmetry compression structure technology, Compared to conventional design, performance increases 4% at full load, while 7% at partial load.

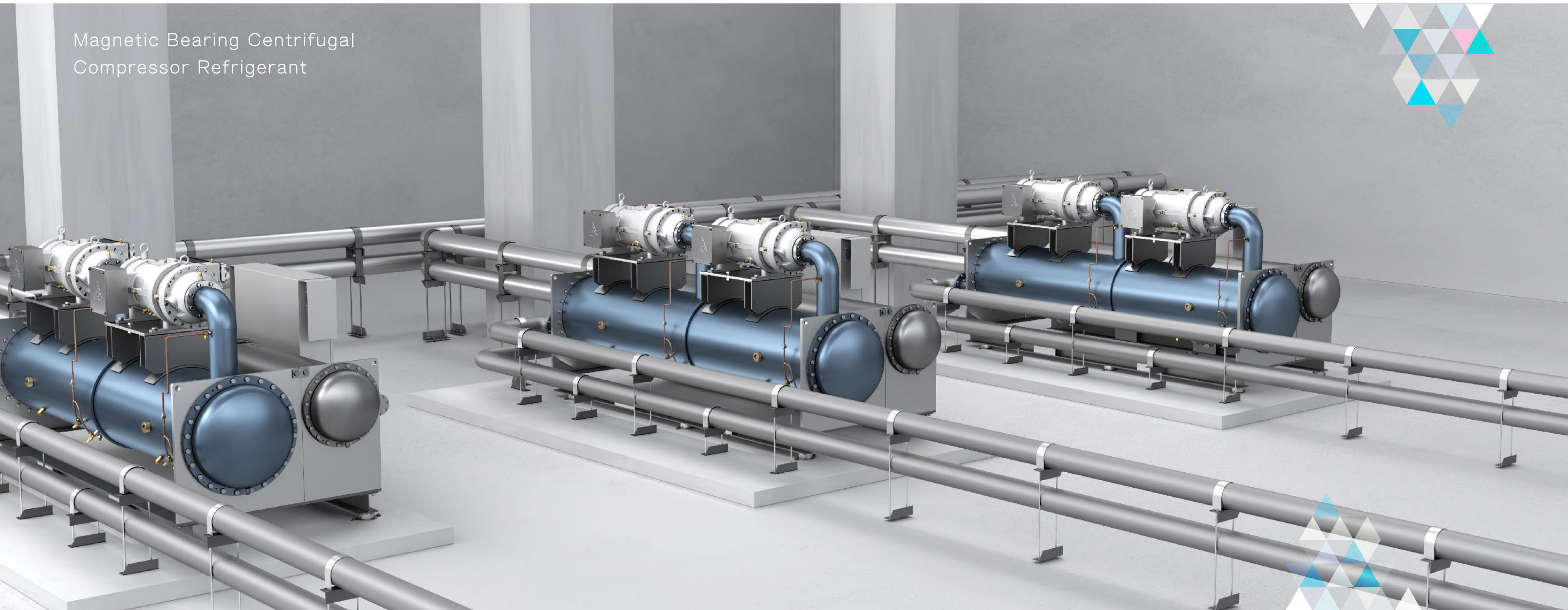


## PMSM Technology

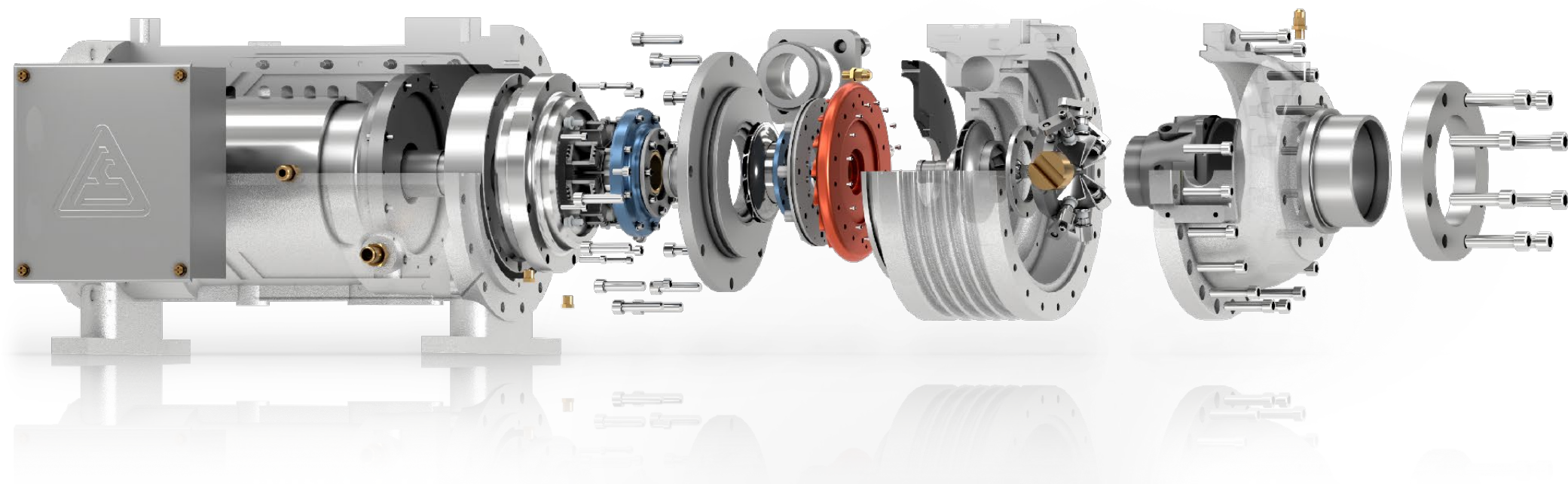
- Use high frequency low loss silicon steel and high quality rare earth to form permanent magnetic field, achieve compact, low total loss, efficiency 0.96 at full range operation conditions.
- Development of an adjustable speed drive system with PMSM, achieve low start up current, low power consumption, low life cycle cost.
- Motor stator and rotor thermal and shaft elongation monitoring system, achieve the accurate motor cooling and high reliability.



## Magnetic Bearing Centrifugal Compressor Refrigerant





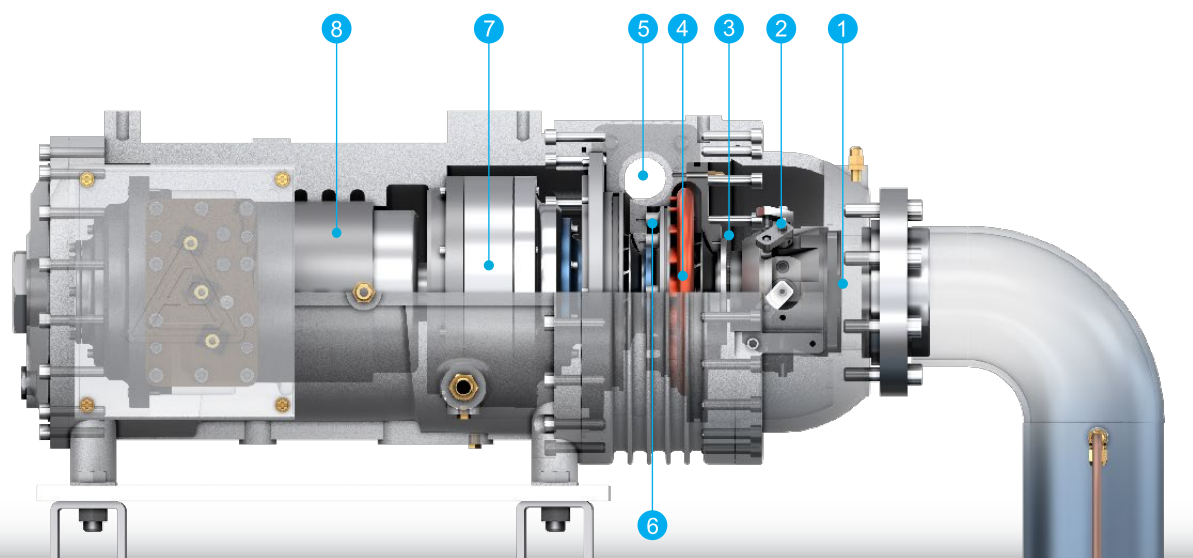


Magnetic Bearing Centrifugal  
Compressor Refrigerant

Simple design, ahead of the industry

## MCR Mechanism

- 1 Suction port
- 2 IGV
- 3 Impeller
- 4 Fluid element
- 5 Discharge port
- 6 ECO port
- 7 Bearings
- 8 PM motor

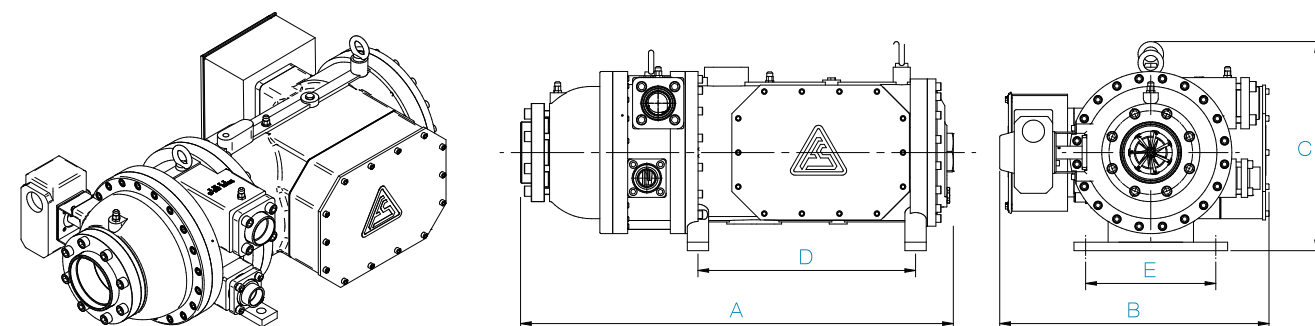


## Outline Dimension

Unit : mm

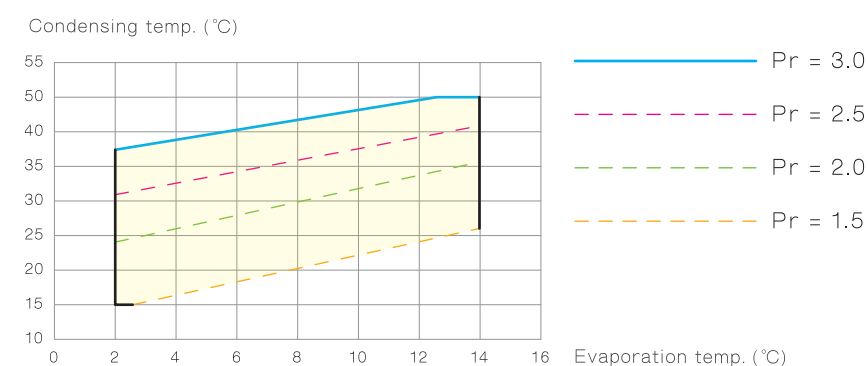
Model	A	B	C	D	E
MCR150	1014	631	490	510	305
MCR250	1117	660	527	476	305
MCR450	1380	783	687	840	500

For reference only, subject to change without prior notice.



## Operation Envelope

MCR 150



## Specification

For reference only, subject to change without prior notice.

Model			150	250	450
Specification	Type		Two- stage centrifugal		
	Cooling capacity	TR	150	250	450
	Rated frequency	Hz	382	283	215
	Refrigerant	—	R134a		
Motor	Type	—	Three phases, Two poles, PM motor		
	Power	—	380V		
	Start up mode	—	Inverter		
	Protection device	—	Phase loss, phase sequence monitor and motor thermal protection.		
Suction port diameter		Inch (mm)	5"	6"	8"
ECO port diameter		Inch (mm)	1-1/2"	1-1/2"	2-5/8"
Discharge port diameter		Inch (mm)	2-5/8"	3-1/8"	2"
Hydraulic pressure test		bar(G)	20		
Weight		kg	260	345	560